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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Revision of the Commission's Rules	)	
To Ensure Compatibility with	)	CC Docket No. 94-102
Enhanced 911 Emergency	)	
Calling Systems	)	

To: Chief, Wireless Telecommunications Bureau

REQUEST FOR RULE WAIVER

Aliant Cellular Inc. ("ACI"), by its attorneys, pursuant to the FCC's Order in the above-referenced proceeding released on November 13, 1998,[1] hereby files its request for waiver ("Waiver") of Section 20.18 of the Commission's Rules. In the Order, the FCC extends forbearance of enforcement of Section 20.18 until December 31, 1998, and requires entities that will be non-compliant as of that date to file requests for waiver by December 4, 1998. ACI will be non-compliant with Section 20.18 upon its enforcement due to the unavailability of compliant equipment from ACI's equipment vendor. Accordingly, ACI respectfully requests a waiver of Section 20.18 until compliant equipment is commercially available.

In the future, ACI plans to supplement its analog cellular service by offering digital wireless

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[1] In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Order, rel. Nov. 13, 1998 ("Order").

service in its markets.[2] ACI greatly desires to comply with the requirements of Section 20.18 and to provide hearing-impaired persons with TTY access to E911 services over its digital wireless network. As the FCC is aware, compliant equipment is not commercially available from ACI's equipment vendor to permit ACI to offer TTY access to E911 services over its digital wireless network. Thus, this is not a situation where compliance is unduly burdensome for ACI, rather, it is impossible for ACI to comply with this rule section because there is not compliant equipment available. Because it is impossible for ACI to comply with the upcoming December 31, 1998 deadline, ACI respectfully requests a waiver of that deadline.

The Order sets forth specific questions that should be answered in support of waivers of the December 31, 1998 deadline. ACI submits that these questions relate to the specifications of the equipment that is being developed to provide TTY compatible service, and as such are beyond the scope of information which ACI can provide. Therefore, such questions are more appropriately addressed by ACI's equipment vendor because the equipment vendor, and not ACI, is directly involved in developing compliant equipment. To form the basis of its Waiver, ACI requested that its equipment vendor provide responses to all information set forth in the Order in sufficient time to meet the December 4, 1998 waiver deadline. This request and the equipment vendor's response thereto is attached as Exhibit A. Based on the information set forth in Exhibit A, ACI respectfully

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[2]ACI holds the following licenses to provide cellular service: Nebraska RSA 1 - Sioux, Market No. 533B, CRS Station KNKN404; Nebraska RSA 2 - Cherry, Market No. 534B, CRS Station KNKN802; Nebraska RSA 3 - Knox, Market No. 535B, CRS Station KNKN504; Nebraska RSA 4 - Grant, Market No. 536B, CRS Station KNKN579; Nebraska RSA 5 - Boone, Market No. 537B, CRS Station KNKN392; Nebraska RSA 6 - Keith, Market No. 538B, CRS Station KNKN615; Nebraska RSA 7 - Hall, Market No. 539B, CRS Station KNKN365; Nebraska RSA 8 - Chase, Market No. 540B, CRS Station KNKN651; Nebraska RSA 9 - Adams, Market No. 541B, CRS Station KNKN423; and Nebraska RSA 10 - Cass, Market No. 542B, CRS Station KNKN424.

requests a waiver of Section 20.18 of the Commission's rules until such time as compliant equipment is available from its equipment vendor. In accordance with the terms of the Order, on a quarterly basis ACI will request updated information from its equipment vendor regarding its progress on developing compliant equipment and submit such updates to extend this waiver request. As soon as equipment is commercially available from its equipment vendor, ACI intends to comply with Section 20.18 of the Commission's rules.

Respectfully Submitted,

ALIANT CELLULAR INC.

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Its Attorneys

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Suite 600
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(202) 328-4500

Dated: December 4, 1998

EXHIBIT A

Aliant Cellular Inc.
500 So. 16th Street
P.O. Box 81309
Lincoln, NE 68501-1309
402 436 4321

Aliant
Cellular

November 30, 1998

Rick Smith
Motorola Inc.

Re: Compliance with FCC Requirements to Provide 911 TTY Access Over Digital Networks

Dear Rick:

As you are aware, Aliant Cellular currently utilizes your Company's CDMA infrastructure equipment to provide digital cellular service throughout its licensed service area.

Section 20.18 of the Federal Communication Commission's ("FCC" or "Commission") rules requires non-discriminatory access to state and local government services such as 911 for people with speech or hearing disabilities. Specifically, the Commission's rules require that all licensees provide TTY access to 911 services over cellular, PCS and certain SMR networks. Until now, the FCC has not enforced this requirement with respect to carriers operating in the digital format. We understand that this forbearance has been based upon the recognition by the FCC that none of the current digital protocols (TDMA, CDMA, iDEN or GSM) are capable of passing TTY data with an acceptable error rate.

The FCC has recently extended the period for which it will forebear from enforcing the requirements of Section 20.18 against digital carriers to **December 31, 1998.** Non-compliant licensees must seek a waiver of this deadline by **December 4, 1998.**[1]

[1] In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Order, rel. Nov. 13, 1998.

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Notwithstanding the FCC's decision to allow further extensions of the forbearance period on a carrier-by-carrier basis, Aliant Cellular wishes to proceed with the deployment of the necessary system modifications to enable full compliance with the requirements of Section 20.18 as quickly as possible. We therefore ask that you provide us with a projected timetable of the availability of the requisite infrastructure equipment to enable the system which we presently have operating to be fully compliant. In addition, we ask that you provide us with a formal quote for that upgrade as soon as it is has completed any requisite FCC type acceptance procedures and becomes commercially available. In addition, we ask that you provide us with the names of any alternate system suppliers which might provide this functionality on an ancillary basis, with equipment that is capable of interfacing with the infrastructure equipment which you have provided.

Until such time as you can provide us with the requisite infrastructure upgrades to enable us to fully comply with the requirements of Section 20.18, we must seek a formal waiver of these rules from the FCC. This waiver must be filed by December 4, 1998.

In support of that waiver, the FCC is requiring certain technical information to be included in the waiver in order for it to receive favorable consideration. However, most of the information sought by the FCC appears to pertain to equipment vendors' ability to supply digital wireless licensees with compliant equipment. Accordingly, in addition to the information requested above, we ask that you provide us with specific responses to the items presented below. Aliant Cellular intends to submit a copy of your response to the FCC in support of Aliant Cellular's request for waiver on December 4, 1998. Therefore, if any of the information which you provide in response to any item set forth below is confidential and therefore subject to the non-disclosure provisions of our Supply Agreement, we ask that you submit a formal answer to each item with such specificity which you would allow to be disclosed publicly to the FCC and provide a detailed response (stamped as confidential) as an attachment to your written response to this letter. Because of the FCC's December 4, 1998 deadline for carriers to seek waivers, we must ask that your written response to this letter be forwarded in sufficient time to ensure its receipt by Aliant Cellular no later than December 1, 1998.

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Questions:

1. Is the infrastructure equipment which you provided to Aliant Cellular and Aliant Cellular is presently operating, capable in its current form or with presently commercially available upgrades, of providing full support and access to TTY devices to ensure reliable access to 911 services by persons utilizing such TTY devices sufficient to enable Aliant Cellular to fully comply with the requirements of Section 20.18 of the FCC's rules? If so, please provide a formal quote and pricing information in accordance with the terms and conditions of our Equipment Supply Agreement. If not, please provide answers to the remaining questions.

B. What steps is Motorola taking or intending to take to provide carriers utilizing its infrastructure equipment with the ability to provide users of TTY devices with the capability to operate such devices in conjunction with digital wireless systems in compliance with Section 20.18 of the rules?

C. When do you intend to make this capability available to your infrastructure users to enable them to provide full Section 20.18 compliant service to TTY users? This information should include well-documented timetables and milestones regarding the implementation of this capability.

D. What reasonable steps are you taking to address the consumer concerns listed below? Where the requested capability is network independent, i.e., your infrastructure equipment could provide that capability now to a common TTY device deployed within the past ten years, please so indicate. Where the system cannot provide that capability to a properly functioning common TTY device deployed within the past 10 years, please indicate whether the item requested is technologically feasible with modification to the infrastructure equipment and, if so, an approximate timeframe for implementation of that capability.

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Consumer Concerns:

1. That the character error rate should approximate that of AMPS, which has been demonstrated at <1% for stationary calls.

2. That the TTY caller be able to visually monitor all aspects of call progress provided to voice users. Specifically, the ability to pass through sounds on the line to the TTY (so that the user can monitor ring, busy, answered-in-voice, etc.) should be provided.

3. That there be a visual indication when the call has been disconnected.

4. That volume control capability should be provided.

5. That the TTY user must have a means of tactile (vibrating) ring signal indication.

6. That the caller must be able to transmit TTY tones independent of the condition of the receiving modem. (This is to permit baudot signaling by pressing a key, to let a hearing person know that the incoming call is from a TTY).

7. That the *landline* party's TTY must not require retrofitting in order to achieve the desired error rate.

8. That the *wireless* party's TTY may require retrofitting, or a new model TTY to be developed, or the use of a portable data terminal such as a personal digital assistant.

9. That VCO and HCO should be supported where possible.

10. That reduction of throughput (partial rate) on Baudot is highly undesirable and should not be relied upon to achieve compliance (See #7). It may be useful as a user-selectable option to improve accuracy on a given call.

11. That call information such as ANI and ALI, where provided in wireless voice, should also be provided for TTY calls.

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12. That the solution need not support seldom, little-used or obsolete TTY models, but in general should support the embedded base of TTYs sold over the past ten years. The landline equipment supported must not be limited to that used in Public Service Answering Points (911 centers).

13. That drive conditions must be supported, again using AMPS as a benchmark.

It is Aliant Cellular's understanding that each and every consumer item addressed above is available today in an AMPS environment. If you have responded that any of the items identified above are not technically feasible with the digital protocol Aliant Cellular has deployed with your infrastructure equipment, please provide sufficient technical detail to Aliant Cellular to properly explain that limitation to the FCC. Also, please identify whether that limitation is inherent to your company's infrastructure equipment or an inherent limitation in the digital protocol.

Assuming that the FCC grants the initial waiver of the December 31, 1998 deadline for a digital carrier to comply with the requirements of Section 20.18, the FCC has indicated that it will require licensees to provide updates every three (3) months on the items set forth above in order for waivers request to remain in effect. These updates are to state the progress that has been or is being made toward implementation of TTY/digital capability. Therefore, we ask that you provide us with updates with respect to each of the items discussed above as soon as such information becomes available, but no less frequently than quarterly by the last business day of February, May, August and November.

Should you have any questions with respect to this matter. Please do not hesitate to contact me. In light of the extremely short time frame which the FCC has allowed for Aliant Cellular to seek a waiver, your prompt attention to this matter would be sincerely appreciated.

Very truly yours,

Jeff Dale
Chief Technical Director

Cc: Jeff Miller

MOTOROLA

December 3, 1998

Dear Informed Customer;

Motorola fully supports the goals of Federal Communications Commission which has called on telecommunications providers to ensure compatibility of existing TDD equipment with Enhanced 911 Emergency Calling Systems.

Motorola has been an active participant in all of the activities related to the implementation of Digital Cellular E911 and Section 255 of the Telecommunications Act of 1996. Motorola was a member of the Telecommunications Access Advisory Committee, a government-sponsored process in which disabled persons, government representatives and industry explored ways to achieve the goals of Section 255 and assisted the Access Board in the creation of the guidelines for implementing Section 255.

We also are working with industry groups, including the Cellular Telecommunications Industry Association (CTIA) Wireless TTY/TDD Forum and the Telecommunications Industry Association Cellular Data Group (TIA/CDG), to find possible solutions for TDD access over digital wireless systems.

In light of the recent Orders released by the Federal Communications Commission, DA98-1982, released September 30, 1998 (September Order) and DA98-2323, which was released November 13, 1998, (November Order) Motorola would like to share with you our plans for providing compliance.

1. Motorola will continue to work with the CTIA Wireless TTY/TDD Forum and TIA/CDG to collect and present test results and demonstrations of several potential methods for dealing with the incompatibility between TDD devices and the Code Division Multiple Access (CDMA) cellular digital technology.
2. Motorola is working with our vendors to build a plan for adding V.18 protocols to the Inter-working Unit (IWU). Part of this plan would be to add this capability in a software upgrade to the IWU. At this time, we anticipate having this plan completed in February, 1999.
3. Motorola is also evaluating vocoder-based solutions that involve changes to the CDMA vocoder as proposed in the TIA/CDG, as well as internally developed solutions. Unfortunately, due to the complexity of the vocoder solutions, we view these as longer term solutions, not short term.

Part of the requirement of the November Order, is to show what steps the carrier will take to address the consumer concerns in the September Order. Motorola has evaluated these concerns in light of the solutions proposed for the infrastructure, and we have included them here.

Either a vocoder solution or the V.18 data solution will address certain of the consumer concerns cited in the September Order. The concerns are listed below, followed by our evaluation for each of the solutions.

1. The character error rate should approximate that of AMPS, which has been demonstrated at <1% for stationary calls. More research on AMPS performance with TTY would be useful to assist in specifying a range of conditions.

   V.18 - This should have the lowest character error rate of the two solutions, on the order of $1x10^{-6}$ or less.

   Vocoder - Would have a higher error rate, but it would be designed to mitigate the 8% error rate that currently exists, and should be within the desired rate.

2. The TTY caller must be able to visually monitor all aspects of call progress provided to voice users. Specifically, the ability to pass through sounds on the line to the TTY (so that the user can monitor ring, busy, answered-in-voice, etc.) should be provided.

   V.18 - A data call on CDMA does not invoke the vocoder, therefore, no sounds would be available to the caller. Busy signals are automatically detected and reported.

   Vocoder - Since this system uses the vocoder, all signals and audible responses should be transported as part of the normal call set-up and answer.

3. There must be a visual indication when the call has been disconnected.

   Either Solution - This requirement is for the subscriber device. Today, Motorola phones have a visual indicator of "in-use". Loss of indicator means the call has been disconnected.

4. A volume control should be provided.

   Either Solution - This requirement is for the subscriber device, and Motorola currently has a volume control on all of its phones.

5. The TTY user must have a means of tactile (vibrating) ring signal indication.

   Either Solution - This requirement is for the subscriber device, and Motorola currently offers vibrating ring on many models.

6. The caller must be able to transmit TTY tones independent of the condition of the receiving modem. (This is to permit Baudot signaling by pressing a key, to let a hearing person know that the incoming call is from a TTY.)

   V.18 - This capability is addressed by the V.18 protocol. Baudot-only systems have no "Calling Tone" -- the signal heard when facsimile machines begin to connect. V.18 automatically tries to determine the condition of the called modem, and negotiates the appropriate protocol.

   Vocoder - With the Vocoder solution, it is expected that the network will only send the signals that it receives. If no signal is transmitted, it sends silence. Pressing a key such as the spacebar, would cause a "space" character to be transmitted. This would meet the requirement.

7. The land-line party's TTY must not require retrofitting in order to achieve the desired error rate.

   V.18 - This protocol consists of five different TDD protocols and the ability to determine which protocol to use. This would have no impact on the land-line TDD.

It is expected that the wireless TDD will either be modified to use RS-232 to communicate with the IWU or have a device to convert the TTY signals to serial data.

Vocoder - This solution is expected to provide Baudot TTY signals, which would be compatible with existing TDD devices.

8. The wireless party's TTY may require retrofitting, or a new model TTY to be developed, or the use of a portable data terminal such as a personal digital assistant.

   V.18 - The V.18 protocol is engaged by using a Hayes Compatible modem command, "AT+MV18S". This command can come from the phone, a device that attaches the TDD to the phone, or by the subscriber entering it directly. The phone will be expecting RS-232 communications from the TDD.

   If the TDD is a Personal Digital Assistant, computer, or portable data terminal, the subscriber would also be able to connect to most any Remote Access Server, such as those provided by Internet Service Providers or On-line Information Providers. This is because they would have full access to the capabilities of the IWU for data transmission.

   Vocoder - It is expected that this solution will require minor changes to allow connection of the TDD audio signals to the CDMA wireless phone. However, it will be designed for Baudot signals only.

9. VCO and HCO should be supported where possible.

   V.18 - Unfortunately, it is currently not possible to switch between voice and data while on a data call, nor is it possible to perform simultaneous voice and data transmissions. These features are under assessment, and are not committed to any release.

   Vocoder - This solution is seen to provide automatic switching between the Baudot signals and voice, and provide for a smooth transition between HCO and VCO.

10. Reduction of throughput (partial rate) on Baudot is highly undesirable and should not be relied upon to achieve compliance (see #7). It may be useful as a user-selectable option to improve accuracy on a given call.

    V.18 - Reduction of throughput by increasing the length of the bit transmission rate is not necessary with V.18. The data is carried as RS-232 serial data over the air with full error recovery at speeds of either 14.4 Kbps or 9.6 Kbps. Only once it reaches the modem in the IWU, where it is no longer subject to the vagaries of the air interface, is it transmitted as full rate Baudot.

    Vocoder - This will depend on the design of the solution, but it is not expected to be required.

11. Call information such as ANI and ALI, where provided in wireless voice, should also be provided for TTY calls.

    V.18 - Tests with the currently shipping IWU show that all the information provided a voice E911 call is also provided for a data E911 call. This includes ANI/ALI,

selective routing, and cell-sector location information. A data call will provide the same E911 Phase I call information as provided for voice.

Vocoder - Since this solution is voice-channel based, it too should provide all the Phase I call information.

12. The solution need not support little-used or obsolete TTY models, but in general should support the embedded base of TTYs sold over the past ten years. The land-line equipment supported must not be limited to that used in Public Service Answering Points (911 centers).

    V.18 - This solution will support up to five modem TDD protocols which are used worldwide. If the TDD is a computer or PDA, it will also provide access to many more computer systems.

    Vocoder - This solution will be based on Baudot, and it is expected that it will be equal to the quality of Baudot currently available.

13. Drive conditions must be supported, again using AMPS as a benchmark.

    V.18 - Unfortunately, since V.18 is not currently available with Baudot support in the IWU, drive testing is not possible. When performing test results for acceptance, a drive test may be performed at the option of the carrier.

    Vocoder - Unfortunately, since a vocoder-based solution is not currently available, drive testing is not possible. When performing test results for acceptance, a drive test may be performed at the option of the carrier.

It is our sincere hope that this information is timely and useful. If you have any questions regarding compatibility with Enhanced 911 Emergency Services, please feel free to contact your Motorola representative.

Thank you, and we look forward to working with you on this project. We will keep you apprised of future developments.

Sincerely,

Daniel Zimny, Program Manager